



2008 Annual Report

## *Building a Better Barnyard*

MARYLAND  
AGRICULTURAL  
WATER  
QUALITY  
COST-SHARE  
PROGRAM

A large white barn with a grey roof and a tall metal silo are the central focus of the image. A white fence runs across the middle ground, and a group of people is standing near a blue truck. The foreground is a grassy field with a body of water at the bottom, which reflects the large text "MACS".

# MACS

# 2008

## The MACS Mission

Since 1984, the Maryland Agricultural Water Quality Cost-Share (MACS) Program has been helping farmers protect natural resources on their farms, adopt sustainable agricultural practices and comply with a growing list of federal, state and local environmental requirements. MACS provides farmers with grants to cover up to 87.5 percent of the cost to install conservation measures known as best management practices (BMPs) on their farms to prevent soil erosion, manage nutrients and safeguard water quality in streams, rivers and the Chesapeake Bay. Cover crops planted after the harvest to take up leftover fertilizers, streamside buffers of grasses and trees planted to protect waterways from sedimentation and farm runoff, and animal waste management systems constructed to help farmers safely handle and store manure resources are among 30 BMPs currently eligible for MACS grants.



**Stabilizing heavy use areas where animals congregate helps prevent erosion, manage wastes and protect water quality.**

## A Message from the Secretary



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It is no secret that our success in cleaning up the Chesapeake Bay depends largely on how well we manage natural resources on the land. For agriculture, helping farmers build a better barnyard is a good place to roll up our sleeves and make improvements on behalf of the Bay. In 2008, the Maryland Agricultural Water Quality Cost-Share (MACS) Program focused its efforts on helping farmers manage manure resources more efficiently, reduce feedlot runoff, and prevent sediment and nutrients from entering our waterways.

With new regulations for concentrated animal feeding operations set to take effect in early 2009, MACS has had a busy year helping livestock and poultry farmers prepare to meet new barnyard management requirements. Approximately 400 grants provided during the year helped construct animal

waste storage structures, dead bird composting facilities, roof runoff structures, heavy use areas, livestock fencing, buffers and other best management practices that are now required for certain livestock operations by the new Maryland Animal Feeding Operation (MAFO) permit.

These barnyard enhancements are essential to keeping manure resources from impacting waterways, preventing rainwater runoff from causing erosion concerns, and reducing nutrient runoff from the barnyard.

During the year, poultry house pads became eligible for cost-share through MACS. These concrete pads are constructed at entrances to poultry houses and waste storage structures to safeguard water quality during poultry house and waste storage cleanouts. Begun as a pilot program in March 2008, the program has taken flight. In just a few short months MACS has provided Eastern Shore farmers with nearly \$1 million in grants to install 173 concrete pads. Moreover, applications for an additional 200 poultry pads were approved in 2008.

Managing manure as a resource can be tricky. As fertilizer prices continue to climb, more and more farmers are reconsidering the benefits of using manure as a fertilizer in accordance with their nutrient management plans. The Maryland Manure Transport Program continues to provide grants to farmers interested in transporting excess manure resources to eligible farms or businesses that can safely use the manure to fertilize crops or to create alternative products or uses. In 2008, MACS helped farmers relocate nearly 100,000 tons of excess manure to farms and business that could use this valuable resource without harm to the environment.

In keeping with Governor Martin O'Malley's *Baystat* model, MACS has begun targeting grant funds toward farmers in certain high priority watersheds where "bundling" programs can achieve big environmental gains for the Bay. During the 2008-2009 planting season, farmers in selected watersheds were offered special incentives to plant cover crops on their fields to reduce nutrient runoff into the Bay. By targeting our resources where they can be most effective in protecting natural resources and working "smarter and greener," we hope to make greater strides in our Bay restoration efforts.

Roger L. Richardson  
*Maryland Secretary of Agriculture*



## 2008 Program Summary

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### 2008 Program Summary

In Fiscal Year 2008, Maryland farmers received \$11.3 million in grants from MACS to install more than 2,000 capital and special projects on their farms to control soil erosion, manage nutrients and protect water quality in streams, rivers and the Chesapeake Bay.

Farmers who received cost-share grants from MACS in 2008 invested more than \$1.6 million of their own money into projects that will collectively prevent an estimated 2.4 million pounds of nitrogen and 138,300 pounds of phosphorus from entering Maryland waterways each year. Cover crops were responsible for the bulk of the nitrogen savings (1.7 million pounds) and nearly 30 percent of the phosphorus savings (41,000 pounds). The projects will also help manage an estimated 15,284 tons of soil annually and 1,569 tons of manure daily in order to prevent impacts to local streams. Cover crops, heavy use areas, nutrient management services, manure transport, streamside protection projects, grassed waterways, animal waste storage structures, grade stabilization structures, roof runoff structures and dead bird composting facilities were among the most popular BMPs installed during the year with MACS assistance.

Low Interest Loans for Agricultural Conservation (LILAC) are available to help farmers supplement federal and state cost-share payments for structural BMPs such as animal waste management systems or stream protection measures. They may also be used to purchase certain types of equipment to reduce soil erosion and manage nutrients. Guaranteed by the State Revolving Loan Fund, LILAC loans are typically offered at three to four percent below market rates and are available at lending institutions statewide. In Fiscal Year 2008, MACS worked with the Maryland Department of the Environment and soil conservation districts to provide farmers with approximately \$300,000 in LILAC loans. The funds were used to help pay for agricultural waste systems and manure handling equipment.

#### SOIL CONSERVATION DISTRICT SUMMARY FOR CAPITAL PROJECTS FISCAL YEAR 2008

District	Completed Projects	Payment Amount
Allegany	8	\$ 81,104
Anne Arundel	3	26,381
Baltimore County	8	42,196
Calvert	7	13,682
Caroline	15	217,111
Carroll	148	683,092
Catoctin	19	148,980
Cecil	23	213,763
Charles	0	0
Dorchester	16	121,341
Frederick	66	519,830
Garrett	16	48,083
Harford	22	136,390
Howard	11	60,224
Kent	45	172,681
Montgomery	11	72,346
Prince George's	7	46,368
Queen Anne's	27	274,502
St. Mary's	9	51,311
Somerset	5	220,642
Talbot	18	78,131
Washington County	16	95,853
Wicomico	8	149,722
Worcester	15	295,371
<b>TOTAL</b>	<b>523</b>	<b>\$3,769,104</b>

Gutters and downspouts on barns direct rainwater to places where it won't cause nutrient runoff or soil erosion.



FISCAL YEAR 2008 PROGRAM SUMMARY		
Capital Projects Approved	Number of Projects	Funds
From State Funds	579	\$ 5,870,683
From Federal Funds	4	\$ 72,700
<b>Total Capital Projects Approved</b>	<b>583</b>	<b>\$ 5,943,383</b>
Capital Projects Completed		
CREP Projects with State Funds	120	\$ 305,668
All Other Projects with State Funds	390	\$ 3,349,941
With Federal Funds	13	\$ 113,495
<b>Total Capital Projects Completed</b>	<b>523</b>	<b>\$ 3,769,104</b>
Special Projects Completed		
Cover Crops	1,180	\$ 6,733,398
Manure Transport	132	\$ 520,357 <sup>1</sup>
Nutrient Management Cost-Share	185	\$ 227,409
<b>Total Special Projects Completed</b>	<b>1,497</b>	<b>\$ 7,481,164</b>
<b>Total Capital and Special Projects Completed</b>	<b>2,020</b>	<b>\$11,250,268</b>
	Nitrogen	Phosphorus
<b>Estimated Pounds of Nutrients Removed by Capital Projects</b>	650,000	97,300
<b>Estimated Pounds of Nutrients Removed by Cover Crops</b>	1,750,000	41,000
	Tons	Acres of Land
<b>Tons of Soil Saved Per Year<sup>2</sup></b>	15,284	1,758
Manure Managed Daily with Animal Waste Storage Structures	Tons of Manure	Animal Units <sup>3</sup>
Poultry Manure Managed Daily	1,162	14,562
Dairy Manure Managed Daily	226	5,503
Beef Manure Managed Daily	147	4,625
Other Animal Manure Managed Daily	34	1,260
<b>Total Animal Manure Managed Daily</b>	<b>1,569</b>	<b>25,950</b>

<sup>1</sup>Does not include poultry company matching funds

<sup>2</sup>Based on the Revised Universal Soil Loss Equation (RUSLE)

<sup>3</sup>One animal unit = 1,000 lbs. of live animal weight

CAPITAL APPROPRIATIONS FOR FISCAL YEARS 1984-2008		
	Number of Projects	Funds
Projects Approved from State Funds	20,389	\$ 109,957,779
Projects Approved from Federal Funds	1,882	\$ 8,609,679
<b>Total Projects Approved</b>	<b>22,271</b>	<b>\$ 118,567,458</b>
Projects Completed with State Funds	17,783	\$ 82,010,139
Projects Completed with Federal Funds	1,970	\$ 9,018,087
<b>Total Projects Completed</b>	<b>19,753</b>	<b>\$ 91,028,226</b>

Completed MACS Cost-Shared Practices by District for Fiscal Year 2008														
Practice	Allegany	Anne Arundel	Baltimore	Calvert	Caroline	Carroll	Catoctin	Cecil	Charles	Dorchester	Frederick	Garrett	Harford	Harris
Conservation Cover				1		8				6				
Contour Farming							1							
Contour Orchard														
Critical Area Planting			1				1	1		2				
Dead Bird Composting Facility				2					2	1				
Diversion								2					2	
Fencing	5		2	4		17	4	2		6	5	6	2	
Field Border														
Field Windbreak														
Filter Strip					2	5				12	1			
Grade Stabilization Structure					8		4	13		2	4		1	
Grassed Waterway			3			50	6	9		1	14		4	2
Heavy Use Area Protection	1	2			24	7	3	1		7	9	1	1	
Lined Waterway or Outlet								1						2
No Till														
Pasture & Hay Planting														
Riparian Forest Buffer	2	1	1	1		13	1			1	4	4	1	1
Roof Runoff Structure						12	1				4	1	3	
Sediment Basin														
Sediment Control Pond					1						1			
Spring Development	1		1			7					4	3	1	2
Stream Crossing						11	1				2		1	1
Strip Cropping, Contour														
Strip Cropping, Field														
Terrace System														
Waste Storage Pond														
Waste Storage Structure					4	4	2	2		2	4	3	3	
Waste Treatment Lagoon														
Wastewater Treatment Strip						3		1			1			
Water Well	2					1					2			1
Watering Facility	3	1	2	1		15	1	2			5	4	1	2
Total	14	4	10	7	41	153	24	35	0	27	70	21	24	13

Howard	Kent	Montgomery	Prince George's	Queen Anne's	St. Mary's	Somerset	Talbot	Washington	Wicomico	Worcester	Total FY2008	Cumulative FY88-08
4		1									20	588
											1	47
											0	2
	1			1							7	782
1			4		4			6	6		26	862
			3	2							9	465
	2			2		1	6				64	961
		1									1	10
											0	2
2		3	7			9			7		48	1,583
9			5			4					50	1,651
27	3	3	8	4		5	2				141	4,095
	1	1	25		62	6	1	20	29		201	464
	1		4			1					9	349
											0	12
			1								1	1
							2				32	1,334
1	1		1								24	537
											0	48
4				1							7	1,030
							1				20	1,102
				1			1				18	414
											0	61
											0	69
1											1	84
											0	36
1			4		4	1	2	8	7		51	1,943
											0	15
											5	23
							2				8	150
	1					1	3				42	1,792
50	10	9	62	11	70	28	20	34	49	786	20,512	

## Maryland's Soil Conservation Districts—Bringing MACS to Farmers

Maryland's 24 soil conservation districts promote and deliver MACS to local farmers. Located in every Maryland county, soil conservation districts—with technical guidance from USDA's Natural Resources Conservation Service—help farmers select the right BMPs for their operations while supervising their installation or construction and developing maintenance plans to keep them in good working order. Agricultural planners working in soil conservation districts also help farmers calculate costs to install BMPs and apply for state and federal cost-share and low interest loans.



## 2008 Special Projects

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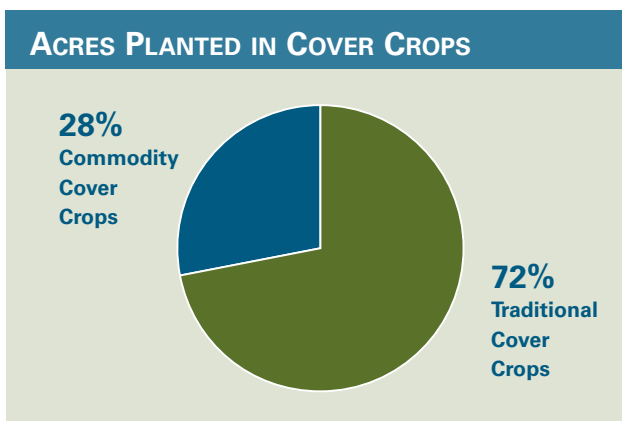
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### Cover Crop Program

Scientists agree that cover crops are one of the most cost-effective and environmentally sustainable ways to control soil erosion and reduce nutrient runoff into the Chesapeake Bay and its tributaries over the winter. MACS provides grants to farmers who plant cover crops of wheat, rye, barley or other cereal grains in the fall, following the harvest of summer crops including corn, soybeans and vegetables. Cover crops recover unused plant nutrients, protect against wind and water erosion and help improve the soil for next year's crop.

MACS offers a Traditional Cover Crop Program, which does not allow for harvest, and a Commodity Cover Crop Program for farmers who want to harvest their cover crops. The use of manure and fertilizer is restricted in both programs. Farmers participating in the Traditional Cover Crop Program received cost-share grants ranging from \$30 to \$50 an acre depending on how early they planted their cover crops. Farmers who harvested their cover crops received \$20 an acre in cost-share grants.

During the 2007-2008 planting season, Maryland farmers planted 187,479 acres of cover crops using more than \$6.7 million in MACS grants. Cover crop acreage was down slightly from the previous season due mainly to late fall rains, which made it difficult for farmers to meet planting deadlines. Approximately 28 percent of the cover crops planted during the 2007-2008 season were harvested.



Cover crops of wheat, rye and barley are planted after the fall harvest to absorb unused nutrients remaining in the soil and prevent erosion during winter.

2007-08 WINTER COVER CROP PROGRAM			
District	Applications	Acres	Total Payment Amount
Allegany	4	62	\$ 2,580
Anne Arundel	12	1,125	33,752
Baltimore	29	4,385	109,660
Calvert	11	997	31,490
Caroline	106	14,349	486,656
Carroll	86	10,443	382,972
Cecil	57	7,366	285,304
Charles	16	2,186	91,865
Dorchester	94	17,572	639,211
Frederick & Catoclin	130	13,464	456,095
Garrett	5	172	8,001
Harford	46	5,380	208,800
Howard	12	940	28,171
Kent	107	20,107	780,085
Montgomery	22	4,324	141,607
Prince George's	19	1,635	64,915
Queen Anne's	101	19,376	665,475
St. Mary's	36	7,415	267,816
Somerset	39	3,568	131,736
Talbot	93	23,157	820,290
Washington	40	4,313	145,111
Wicomico	55	11,578	454,663
Worcester	60	13,565	497,143
<b>Total</b>	<b>1,180</b>	<b>187,479</b>	<b>\$6,733,398</b>

## Nutrient Management Services

Maryland law requires farmers to follow nutrient management plans when applying fertilizer, manure or other nutrient sources to their crop fields. These plans must be prepared by a University of Maryland Cooperative Extension specialist, private consultant or farmer who is trained and certified by MDA to develop an approved plan for his/her operation. MACS provides financial assistance to farmers who hire private, non-government consultants to develop or update nutrient management plans for their farms. The reimbursement rate is 87.5 percent of the cost of the plan, up to \$3,000 per operation. Grants cover one nutrient management plan/update per operator, per year. Certain out of pocket expenses incurred by farmers certified to develop their own plans and operators whose plans are developed by Extension consultants are also covered.

During Fiscal Year 2008, MACS issued \$227,409 in cost-share grants to 185 farmers who hired private consultants to develop nutrient management plans covering 120,501 acres of farmland. Due to funding limitations, the program exhausted its budget within the first three months of the fiscal year and in the short term, stopped accepting new cost-share applications.

Animal waste storage structures allow farmers to protect stored manure from rainwater runoff until it can be applied safely to fields as a fertilizer in accordance with a nutrient management plan.

### FISCAL YEAR 2008 DISTRICT SUMMARY FOR NUTRIENT MANAGEMENT COST-SHARE

District	Completed Plans	Acres	Payment Amount
Allegany	0	0	\$ 0
Anne Arundel	9	5,710	12,367
Baltimore	8	1,540	5,202
Calvert	1	1	241
Caroline	11	6,140	13,716
Carroll	11	6,347	8,354
Catoctin	0	0	0
Cecil	18	12,325	18,122
Charles	0	0	0
Dorchester	22	21,108	38,599
Frederick	29	11,050	31,475
Garrett	1	50	290
Harford	9	5,633	11,120
Howard	5	1,393	3,684
Kent	21	25,661	32,502
Montgomery	6	6,786	10,210
Prince George's	0	0	0
Queen Anne's	11	8,639	17,011
St. Mary's	10	3,737	10,547
Somerset	2	359	1,947
Talbot	5	2,456	6,986
Washington	1	121	594
Wicomico	5	1,445	4,442
Worcester	0	0	0
<b>Total</b>	<b>185</b>	<b>120,501</b>	<b>\$227,409</b>





## Manure Transport

Maryland's Manure Transport Program—the first of its kind in the nation—provides poultry and livestock farmers with cost-share funds to remove excess manure from their farms that cannot be utilized in accordance with a nutrient management plan. Poultry, dairy, beef and other animal producers with high soil phosphorus levels or inadequate acreage to spread their manure may apply for cost-share grants of up to \$20 per ton to transport excess manure to other locations that can use the product in an environmentally safe manner. Cost-share rates are 25 percent higher for farms located in Dorchester, Somerset, Wicomico and Worcester counties.

In Fiscal Year 2008, 132 farmers received \$520,357 in state grant payments to transport 99,817 tons of manure to approved farms and businesses. Delmarva poultry companies provided matching funds to transport poultry litter, bringing the total amount of financial support provided to farmers through the transport program in 2008 to \$891,342.



### MANURE TRANSPORT PROGRAM SUMMARY

Payments for Transport			
Fiscal Year	Actual Tons Transported	State Cost-Share	Poultry Companies Cost-Share*
FY1999	1,896	\$ 17,992	\$ 17,992
FY2000	13,366	111,464	111,464
FY2001	20,477	195,559	195,559
FY2002	47,481	434,610	420,395
FY2003	28,556	233,444	229,645
FY2004	40,755	295,356	285,806
FY2005	36,329	239,196	200,113
FY2006	69,009	380,694	293,728
FY2007	99,297	490,011	356,955
FY2008	99,817	520,357	370,985
<b>TOTALS</b>	<b>456,983</b>	<b>\$2,918,683</b>	<b>\$2,482,642</b>

MACS provides poultry and livestock farmers with cost-share assistance to transport excess manure from their farms to other producers that can use this valuable resource in accordance with a nutrient management plan.

*\*Match provided for poultry litter only. Other manure transport cost-shared by MDA at up to 87.5 percent.*

## Conservation Reserve Enhancement Program

The Conservation Reserve Enhancement Program (CREP) is a state-federal initiative that offers landowners special incentives to remove environmentally sensitive cropland from production for 10 to 15 years in exchange for land rental payments. Farmers who sign up with the voluntary program agree to plant grassed or forested buffers, stabilize highly erodible land, create wildlife habitat or establish wetlands to protect local streams. Landowners may also sell a permanent easement on their CREP enrolled land to the State of Maryland.

Signup for CREP is ongoing and authorized until 100,000 acres are enrolled. The program has achieved 75 percent of its enrollment target with 74,822 acres enrolled through the end of Fiscal Year 2008. When fully implemented, CREP is expected to prevent 5,750 tons of nitrogen and 550 tons of phosphorus from entering Maryland waterways each year. Sediment loadings to the Bay will also be reduced by an estimated 200,000 tons annually.

During the year, Maryland submitted a proposal to USDA aimed at revitalizing CREP. The proposal streamlines the program to encourage increased farmer participation while making land rental agreements and BMP components easier to implement for program staff. At press time, Maryland was awaiting a decision from USDA on its proposal.

In Fiscal Year 2008, MACS provided 120 landowners throughout the state with \$305,668 in cost-share funds to install streamside buffers, conservation cover, stream crossings, animal fencing and other BMPs on farmland enrolled in CREP.



MACS provides cost-share funds to help farmers install streamside buffers, livestock crossings and animal fencing on lands enrolled in the Conservation Reserve Enhancement Program.

## Maryland's 24 Soil Conservation Districts

Allegany .....	301-777-1747, ext. 3
Anne Arundel.....	410-571-6757
Baltimore County .....	410-666-1188, ext. 3
Calvert .....	410-535-1521, ext. 3
Caroline .....	410-479-1202, ext. 3
Carroll .....	410-848-8200, ext. 3
Catoctin .....	301-695-2803, ext. 3
Cecil .....	410-398-4411, ext. 3
Charles.....	301-934-9588, ext. 3
Dorchester .....	410-228-5640, ext. 3
Frederick.....	301-695-2803, ext. 3
Garrett .....	301-334-6951
Harford .....	410-838-6181, ext. 3
Howard .....	410-489-7987
Kent.....	410-778-5150, ext. 3
Montgomery .....	301-590-2855
Prince George's .....	301-574-5162, ext. 3
Queen Anne's .....	410-758-3136, ext. 3
St. Mary's .....	301-475-8402, ext. 3
Somerset.....	410-651-1575, ext. 3
Talbot.....	410-822-1577, ext. 3
Washington County .....	301-797-6821, ext. 3
Wicomico .....	410-546-4777, ext. 3
Worcester .....	410-632-5439, ext. 3



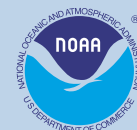
**Maryland  
Department of Agriculture**

**Office of Resource Conservation  
Conservation Grants Program**

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Anthony G. Brown, *Lt. Governor*  
Roger L. Richardson, *Secretary*  
Earl F. Hance, *Deputy Secretary*



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